

**ABSTRACT**

A system and method for classifying signals occurring in a frequency band. One or more characteristics of one or more signals in the frequency band are detected using any suitable technology, such as a device that can generate characteristics of signal pulses detected in the frequency band. Data pertaining to the signal pulses is accumulated over time. The accumulated signal data is compared against reference data associated with known signals to classify the one or more signals in the frequency band based on the comparison. The accumulated data may include one or more characteristics selected from the group consisting of: pulse center frequency, pulse bandwidth, pulse duration, time between pulses and number of different active pulses, and wherein the reference data associated with each of a plurality of known signals comprises one or more characteristics selected from the group consisting of: pulse center frequency, pulse bandwidth, pulse duration and time between pulses. The accumulated signal data is compared against the reference data, and depending on the degree of match with reference data, a signal can be classified. Additional levels of signal classification processing may be performed.